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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/627,656

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Takao Aichi

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EXAMINER

KASSA, HILINA S

ART UNIT

PAPER NUMBER

2625

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/627,656	<b>Applicant(s)</b> AICHI, TAKAO	
	<b>Examiner</b> HILINA S. KASSA	<b>Art Unit</b> 2625	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 October 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/22/2008 has been entered.
2. Claim 2 is canceled and claims 1, and 3-13 are pending.

### ***Claim Objections***

3. Claim 5 is objected to because of the following informalities:

In Claim 5, line 1, "**the apparatus according to claim 2**" needs correction as claim 2 is a canceled claim. Appropriate correction is required.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1, 3-13 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 3-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inora et al. (US Patent Number 6,145,947) and Couwenhoven et al. (US Patent Number 6,354,689 B1) and further in view of Kamoshida et al. (US Patent Number 6,565,174 B2).

**(1) regarding claim 1:**

As shown in figure 1, Inora et al. discloses a print control apparatus connected to a printer (**103, figure 1, column 2, lines 52-54; note that a printer controller is disclosed**), comprising:

an acquisition unit for acquiring printer information which includes non-ejection nozzle information specifying a non-ejection nozzle of a print head from the printer (**column 1, lines 60-65; note that the printer controller controls the operation of the print head having a plurality of nozzles i.e. ejecting and non-ejecting nozzles**);

a generation unit for generating data such that (i) dot data is delivered to nozzles in a nozzle sequence having a maximum length of available nozzle sequence that are formed by segmenting nozzles of print head by a non-ejection nozzle (**figure 6, column 5, lines 20-30, lines 40-45; note that the print image data gets generated and the print controller divides the print image data of the line buffer into a plurality of**

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**clot blocks each having a dot matrix and determines the ejection dot for the effective block) and**

a transmission unit for transmitting the data generated by said generation unit to a printer (**column 2, lines 51-54; note that print data is transferred from the host computer to a printer via data receiver**).

Inora et al. discloses all of the subject matter as described as above except for specifically teaching NULL data is delivered to the remaining nozzles based upon the non-ejection information specifying the non-ejection nozzle acquired by said acquisition unit.

However, Couwenhoven et al. disclose NULL data is delivered to the remaining nozzles (**column 10, lines 10-13; note that a zero data gets assigned to the mal-performing or the non-ejecting nozzles**), based upon the non-ejection information *specifying the non-ejection nozzle* acquired by said acquisition unit (**column 6, lines 50-54; note that the active nozzles n2-n14 can be able to proceed with the printing based on the non-ejecting nozzles**).

Inora et al. and Couwenhoven et al. are combinable because they are from the same field of endeavor i.e. processing data for printing. At the time of the invention it would have been obvious to a person of ordinary skilled in the art to have NULL data as data for nozzles in the available nozzle groups other than the maximum group, and as data for the non-ejection nozzle based upon the non-ejection information specifying the non-ejection nozzle acquired by said acquisition unit. The suggestion/motivation for doing so would have been in order to effectively compensate inoperative ink nozzle

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without substantial loss of density in the set of ink drop states for each image pixel (column 4, lines 21-24). Therefore, it would have been obvious to combine Inora et al. with Couwenhoven et al. to obtain the invention as specified in claim 1.

Inora et al. and Couwenhoven et al. disclose all of the subject matter as described as above except for specifically teaching wherein the print control apparatus gives the printer a notice of reducing a feed amount by the number of nozzles to which NULL data is delivered preparatory for transmission of the data by said transmission unit.

However, Kamoshida et al. teach wherein the print control apparatus gives the printer a notice of reducing a feed amount by the number of nozzles to which NULL data is delivered preparatory for transmission of the data by said transmission unit (**figure 5, column 10, lines 51-61; note that the sheet-feed amount is reduced from the predetermined sheet-feed amount by the distance equivalent to the differences between the unused nozzle**).

Inora et al., Couwenhoven et al. and Kamoshida et al. are combinable because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skilled in the art wherein the print control apparatus gives the printer a notice of reducing a feed amount by the number of nozzles to which NULL data is delivered preparatory for transmission of the data by said transmission unit. The suggestion/motivation for doing so would have been in order to save paper and acquire a better control of the apparatus (column 2, lines 13-15).

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Therefore, it would have been obvious to combine Inora et al., Couwenhoven et al. with Kamoshida et al. to obtain the invention as specified in claim 1.

**(2) regarding claim 3:**

Inora et al. further disclose the apparatus according to claim 1, further comprising a display which is connected to a computer network (**21, figure 1**), and displays data provided by a server connected to the computer network (**20, figure 1, column 2, lines 48-49; note that the host is considered as the server which is in communication with the display**), and wherein a location of the information to be printed is transmitted to the server via a window which is displayed on said display and is provided by the server (**column 6, lines 57-67; note that the host receives printer information and the information gets displayed on the monitor**).

**(3) regarding claim 4:**

Inora et al. further disclose the apparatus according to claim 3, wherein a print mode of the printer is input via the window which is displayed on said display (**column 7, lines 1-5; note that the ink level information of the printer gets displayed in the monitor i.e. color or monochrome inks levels**), and the print mode is transmitted to the server together with the printer information (**column 6, lines 58-62; note that the printer ink level is transmitted to the host with the printer information**).

**(4) regarding claim 5:**

Inora et al. disclose all of the subject matter as described as above except for teaching, wherein the server generates the print data so as to transmit null data to a nozzle group having a smaller number of nozzles.

However, Couwenhoven et al. disclose wherein the server generates the print data so as to transmit null data to a nozzle group having a smaller number of nozzles **(column 10, lines 9-13; note that the nozzles with the highest malperformance value is assigned to a zero)**.

Inora et al. and Couwenhoven et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art wherein the server generates the print data so as to transmit null data to a nozzle group having a smaller number of nozzles. The suggestion/motivation for doing so would have been in order to effectively compensate inoperative ink nozzle without substantial loss of density in the set of ink drop states for each image pixel (column 4, lines 21-29). Therefore, it would have been obvious to combine Inora et al. with Couwenhoven et al. to obtain the invention as specified in claim 5.

**(5) regarding claim 6:**

Inora et al. further discloses a print system formed by connecting:

a print control apparatus of claim 1 **(103, figure 1)**: a printer **(10, figure 1)**



Inora et al. disclose all of the subject matter as described as above except for teaching, a server for generating print data for performing printing without using a non-ejection nozzle on the basis of printer data and information to be printed.

However, Couwenhoven et al. disclose a server for generating print data for performing printing without using a non-ejection nozzle on the basis of data and information to be printed (**column 9, lines 18-25; note that the better performing nozzles will be used to produce more important states without using the non-ejection nozzles**).

Inora et al. and Couwenhoven et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skilled in the art a server for generating print data for performing printing without using a non-ejection nozzle on the basis of data and information to be printed. The suggestion/motivation for doing so would have been in order to elongate the lifetime of the print head so that the printing cost is reduced (column 4, lines 29-31). Therefore, it would have been obvious to combine Inora et al. with Couwenhoven et al. to obtain the invention as specified in claim 6.

**(6) regarding claim 9:**

Inora et al. further discloses, the computer-executable program product embodied in a computer-readable storage medium according to claim 8, wherein the server generates the print data for performing printing (**column 2, lines 52-54; note that print data is transmitted to be printed**).

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Inora et al. disclose all of the subject matter as described as above except for specifically teaching using a nozzle group having a greater number of nozzles among a first nozzle group (**column 3, lines 58-59; note that there are two groups of nozzle groups also refer to figure 3**) and a second nozzle group separated by the non-ejection nozzle in the print head based upon the non-ejection nozzle information acquired by said acquisition unit (**column 3, lines 54-56; note that the two groups of nozzles are separated by the malfunctioned nozzle**).

Inora et al. and Couwenhoven et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skilled in the art to have using a nozzle group having a greater number of nozzles among a first nozzle group and a second nozzle group separated by the non-ejection nozzle in the print head based upon the non-ejection nozzle information acquired by said acquisition unit. The suggestion/motivation for doing so would have been in order to elongate the lifetime of the print head so that the printing cost is reduced (column 4, lines 29-31). Therefore, it would have been obvious to combine Inora et al. with Couwenhoven et al. to obtain the invention as specified in claim 9.

**(7) regarding claim 12:**

Inora et al. disclose all of the subject matter as described as above except for teaching, wherein the server generates the print data so as to transmit null data to a nozzle group having a smaller number of nozzles.

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However, Couwenhoven et al. disclose wherein the server generates the print data so as to transmit null data to a nozzle group having a smaller number of nozzles **(column 10, lines 9-13; note that the nozzles with the highest malperformance value is assigned to a zero)**.

Inora et al. and Couwenhoven et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art wherein the server generates the print data so as to transmit null data to a nozzle group having a smaller number of nozzles. The suggestion/motivation for doing so would have been in order to effectively compensate inoperative ink nozzle without substantial loss of density in the set of ink drop states for each image pixel (column 4, lines 21-29). Therefore, it would have been obvious to combine Inora et al. with Couwenhoven et al. to obtain the invention as specified in claim 12.

**(8) regarding claim 13:**

Inora et al. discloses all of the subject matter as described as above except for specifically teaching a notifying unit for notifying a printer that a unit paper feed amount is to be shortened by lines corresponding in number to a nozzle group having the smaller number of nozzles among the first nozzle group and the second nozzle group which are separated by the non-ejection nozzle, based upon the non-ejected nozzle information acquired by said acquisition unit.

However, Couwenhoven et al. teaches a notifying unit for notifying a printer that a unit paper feed amount is to be shortened by lines corresponding in number to a nozzle group having the smaller number of nozzles among the first nozzle group and the second nozzle group which are separated by the non-ejection nozzle (**column 5, line 63-column 6, lines 3; note that the group of nozzles compensate for the malperforming nozzle and the second group of nozzles print along the same row of image pixels; also, the receiver medium is advanced in a perpendicular direction by a distance equal to half of the print head height**), based upon the non-ejection nozzle information acquired by said acquisition unit (**column 3, lines 54-67**).

Inora et al. and Couwenhoven et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have a notifying unit for notifying a printer that a unit paper feed amount is to be shortened by lines corresponding in number to a nozzle group having the smaller number of nozzles among the first nozzle group and the second nozzle group which are separated by the non-ejection nozzle, based upon the non-ejected nozzle information by said acquisition unit. The suggestion/motivation for doing so would have been in order to effectively compensate inoperative ink nozzle without substantial loss of density in the set of ink drop states for each image pixel (column 4, lines 21-24). Therefore, it would have been obvious to combine Inora et al. with Couwenhoven et al. to obtain the invention as specified in claim 13.

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7. Claim 7 recites the same feature as claim 1 except claim 7 is method of claim 1.

Thus, the argument made above for claim 1 is equally applicable for claim 7.

8. Claim 8 recites the same feature as claim 1 except claim 7 is a computer executable program of claim 1. Thus, the argument made above for claim 1 is equally applicable for claim 8.

9. Claim 10 recites the same feature as claim 3 except claim 10 is a computer executable program of claim 3. Thus, the argument made above for claim 3 is equally applicable for claim 10.

10. Claim 11 recites the same feature as claim 4 except claim 11 is a computer executable program of claim 4. Thus, the argument made above for claim 4 is equally applicable for claim 11.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Hilina Kassa whose telephone number is (571) 270-1676.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore could be reached at (571) 272- 7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pari-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hilina S Kassa/  
Examiner, Art Unit 2625  
October 28, 2008

/David K Moore/  
Supervisory Patent Examiner, Art Unit 2625